CLAIMS:

1. A gray scale voltage outputting device for outputting gray scale voltages in response to an image signal having a plurality of image data,

wherein said device comprises a first selecting means, having a plurality of first inputting portions for receiving a plurality of gray scale voltage groups each of which has a plurality of gray scale voltages, for selecting one of said received plurality of gray scale voltage groups,

and wherein said device outputs one or more gray scale voltages of said plurality of gray scale voltages of said selected gray scale voltage group.

2. A gray scale voltage outputting device as claimed in claim 1,

wherein said device comprises a first outputting means having a plurality of first outputting portions for outputting said plurality of gray scale voltage groups to said plurality of first inputting portions of said first selecting means during a first predetermined period.

3. A gray scale voltage outputting device as claimed in claim 2,

wherein said first outputting means comprises a generating means for generating said plurality of gray scale voltage groups,

and wherein said generated plurality of gray scale voltage groups are outputted from said plurality of first outputting portions of said first outputting means during said first predetermined period.

4. A gray scale voltage outputting device as claimed in claim 3,

wherein said image data is represented by a plurality of bits,

and wherein the total number of said gray scale voltages of said generated plurality of gray scale voltage groups is equal to the number of bit patterns which said plurality of bits can take.

5. A gray scale voltage outputting device as claimed in claim 4,

wherein said first selecting means selects one of said received plurality of gray scale voltage groups on the basis of a bit pattern of higher order bits of said plurality of bits, said higher order bits comprising at least the most significant bit of said plurality of bits,

and wherein said device outputs one or more gray scale voltages of said plurality of gray scale voltages of said selected gray scale voltage group on the basis of a bit pattern of lower order bits of said plurality of bits, said lower order bits comprising at least the least significant bit of said plurality of bits.

6. A gray scale voltage outputting device as claimed in claim 2,

wherein said image data is represented by a plurality of bits,

and wherein the total number of said gray scale voltages of said plurality of gray scale voltage groups is smaller than the number of bit patterns which said plurality of bits can take.

7. A gray scale voltage outputting device as claimed in claim 6,

wherein said first outputting means comprises a second selecting means, having a plurality of second inputting portions for receiving a plurality of reference voltage group each of which has a plurality of reference voltages, for selecting two of said received plurality of reference voltage groups,

and wherein said first outputting means outputs said plurality of gray scale voltage groups from said plurality of first outputting portions on the basis of said selected two reference voltage groups.

8. A gray scale voltage outputting device as claimed in claim 7,

wherein said second selecting means selects said two reference voltage groups on the basis of a bit pattern of higher order bits of said plurality of bits, said higher order bits comprising at least the most significant bit of said plurality of bits,

wherein said first selecting means selects one of said received plurality of gray scale voltage groups on the basis of a bit pattern of intermediate order bits of said plurality of bits,

and wherein said device outputs one or more gray scale voltages of said plurality of gray scale voltages of said selected gray scale voltage group on the basis of a bit pattern of lower order bits of said plurality of bits, said lower order bits comprising at least the least significant bit of said plurality of bits.

9. A gray scale voltage outputting device as claimed in claims 7 or 8,

wherein at least one of said reference voltage groups is used as said gray scale voltage group.

10. A gray scale voltage outputting device as claimed in any one of claims 7 to 9,

wherein said first outputting means comprises a second outputting means having a plurality of second outputting portions for outputting said plurality of reference voltage groups to said plurality of second inputting portions of said second selecting means during a second predetermined period.

11. A gray scale voltage outputting device as claimed in any one of claims 5, 8, 9 and 10,

wherein said device comprises a third selecting means for selecting one or more gray scale voltages of said plurality of gray scale voltages of said selected gray scale voltage group.

12. A gray scale voltage outputting device as claimed in claim 11,

wherein said first selecting means sequentially outputs said plurality of gray scale voltages of said selected gray scale voltage group to said third selecting means,

and wherein said third selecting means selects a first gray scale voltage of said plurality of gray scale voltages and dose not select a second gray scale voltage of said plurality of gray scale voltages, said first gray scale voltage corresponding to said bit pattern of said lower order bits and said second gray scale voltage being outputted from said first selecting means after said first gray scale voltage.

13. A gray scale voltage outputting device as claimed in claim 12,

wherein said third selecting means also selects a third gray scale voltage of said plurality of gray scale voltages, said third gray scale voltage being outputted from said first selecting means before said selected first gray scale voltage.

14. A gray scale voltage outputting device as claimed in any one of claims 2 to 13,

wherein said first predetermined period comprises a first sub-period and a second sub-period, said first sub-period being for outputting a gray scale voltage corresponding to said image data having the least significant bit of a first logic, said second sub-period being for outputting a gray scale voltage corresponding to said image data having the least significant bit of a second logic.

15. A gray scale voltage outputting device as claimed in claim 14,

wherein said first sub-period precedes said second sub-period,

and wherein said first sub-period is longer than said second sub-period.

16. A gray scale voltage outputting device as claimed in any one of claims 2 or 3,

wherein a first gray scale voltage group of said plurality of gray scale voltage group comprises a smaller gray scale voltage than a predetermined ideal gray scale voltage during a first frame period of successive frame periods,

wherein a second gray scale voltage group of said plurality of gray scale voltage group comprises a higher gray scale voltage than said predetermined ideal gray scale voltage during a second frame period of said successive frame periods,

wherein said first selecting means selects said first gray scale voltage group during said first frame period and selects said second gray scale voltage group during said second frame period,

and wherein said device outputs said smaller gray scale voltage if said first selecting means selects said first gray scale voltage group and outputs said higher gray scale voltage if said first selecting means selects said second gray scale voltage group.

17. A gray scale voltage outputting device as claimed in claim 16,

wherein said device comprises a processing means for processing a series of image data each of which having a predetermined bit pattern,

wherein said processing means outputs said series of image data as a series of outputting data comprising a first outputting data and a second outputting data, said first outputting data having said predetermined bit pattern and said second outputting data having a different bit pattern from said predetermined bit pattern,

and wherein said device outputs said smaller gray scale voltage during said first frame period and outputs said higher gray scale voltage during said second frame period on the basis of said series of outputting data.

18. A gray scale voltage outputting device as claimed in claim 17,

wherein said first selecting means selects one of said first and second gray scale voltage groups on the basis of a bit pattern of higher order bits of a first plurality of bits and selects the other of said first and second gray scale voltage groups on the basis of a bit pattern of higher order bits of a second plurality of bits, said first plurality of bits representing said first outputting data, said second plurality of bits representing said second outputting data

19. A gray scale voltage outputting device as claimed in claims 17 or 18,

wherein a third gray scale voltage group of said plurality of gray scale voltage groups comprises a predetermined gray scale voltage deviating from said predetermined ideal gray scale voltage,

wherein said device comprises an additional voltage outputting means for outputting an additional gray scale voltage deviating from said predetermined ideal gray scale voltage,

wherein one of said predetermined gray scale voltage and said additional gray scale voltage is larger than said predetermined ideal gray scale voltage and the other is smaller than said predetermined ideal gray scale voltage,

and wherein said device outputs said predetermined gray scale voltage during one of said first and second frame periods and outputs said additional gray scale voltage during the other of said first and second frame periods on the basis of said series of outputting data.

20. A gray scale voltage outputting device as claimed in claim 19,

wherein said predetermined gray scale voltage is maximum gray scale voltage or minimum gray scale voltage.

21. A gray scale voltage outputting device as claimed in any one of claims 17 to 20,

wherein said device comprises a third selecting means for selecting one or more gray scale voltages of said plurality of gray scale voltages of said selected gray scale voltage group.

22. A gray scale voltage outputting device as claimed in claim 21,

wherein said device comprises a connection switching means for switching whether said third selecting means should be connected to said first selecting means or connected to said additional voltage outputting means.

23. A gray scale voltage outputting device as claimed in claims 21 or 22,

wherein said first selecting means sequentially outputs said plurality of gray scale voltages of said selected gray scale voltage group to said third selecting means,

and wherein said third selecting means selects first gray scale voltage of said plurality of gray scale voltages and dose not select a second gray scale voltage of said plurality of gray scale voltages, said first gray scale voltage corresponding to said bit pattern of said lower order bits and said second gray scale voltage being outputted from said first selecting means after said first gray scale voltage.

24. A gray scale voltage outputting device as claimed in claim 23,

wherein said third selecting means also selects a third gray scale voltage of said plurality of gray scale voltages, said third gray scale voltage being outputted from said first selecting means before said selected first gray scale voltage.

25. A gray scale voltage outputting device as claimed in any one of claims 16 to 24, wherein said first predetermined period comprises a first sub-period and a second sub-period, said first sub-period being for outputting a gray scale voltage corresponding to said image data having the least significant bit of a first logic, said second sub-period being for outputting a gray scale voltage corresponding to said image data having the least significant bit of a second logic.

26. A gray scale voltage outputting device as claimed in claim 25, wherein said first sub-period precedes said second sub-period, and wherein said first sub-period is longer than said second sub-period.

27. A image display device comprising a gray scale voltage outputting device as claimed in any one of claims 1 to 26.